



# UNITED STATES PATENT AND TRADEMARK OFFICE

*lh*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,034	12/04/2003	Kuan-Lun Chang	67,200-1157	8853

7590 03/01/2006

TUNG & ASSOCIATES  
Suite 120  
838 W. Long Lake Road  
Bloomfield Hills, MI 48302

EXAMINER
----------

GARCIA, JOANNIE A

ART UNIT	PAPER NUMBER
----------	--------------

2823

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/729,034	Applicant(s) CHANG ET AL.	
	Examiner Joannie A. Garcia	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 11 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-31 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 11, 22, 23 and 25 is/are rejected.
- 7) ☒ Claim(s) 2, 4, 10 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The finality stated in the Office Action mailed 10-07-05 has been withdrawn.

Claims 1, 3, 5-7, 11, 22, 23, and 25, are rejected under 35 U.S.C. 102(e) as being anticipated by Kiyotoshi (US 2004/0152258 A1).

Kiyotoshi discloses a first MIM capacitor structure disposed in a first IMD layer 213 comprising a first upper electrode 204a and a first lower electrode 202a (Figures 17-18), at least a second MIM capacitor structure arranged in stacked relationship in an overlying IMD layer 214 comprising a second upper electrode 210a and second lower electrode 208a separate from said first upper and first lower electrodes to form an MIM capacitor stack (Figures 17-18), wherein a lowermost MIM capacitor structure is formed in an IMD layer greater than about the second IMD layer formed over a semiconductor wafer (Figures 17-18), wherein, the first lower electrode is arranged in common electrical signal communication comprising electrically communicating vias with the second upper electrode and the first upper electrode is arranged in common electrical signal communication with the second lower electrode to form said MIM capacitor stack in parallel electrically relationship (Figure 18, and Paragraph 0082), wherein the respective upper and lower electrodes comprise a metal selected from the group consisting of Al, Cu, Ta, Ti, and nitrides that comprise silicided nitrides thereof (Paragraphs 0049 and 0066), wherein a respective lower electrode of a respective MIM capacitor structure has a width dimension greater than a respective upper electrode (Figure 17), and wherein the upper electrodes including electrically communicating metal filled vias of the respective MIM structures in the MIM capacitor stack comprise a substantially identical structure (Figure 18), a tantalum oxide capacitor dielectric sandwiched between the respective upper and lower electrodes (Figure 18,

Art Unit: 2823

and Paragraph 0071), and respective upper and lower electrodes comprise TiN, or TaN (Paragraph 0066).

Claims 2, 4, 10, and 24, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 26-31 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joannie García whose telephone number is (571) 272-1861. The examiner can normally be reached on Monday through Friday.

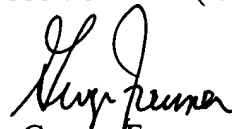
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JAG

February 17, 2006



George Fourson  
Primary Examiner  
Art Unit 2823

GFourson  
Primary Examiner